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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/561,151

09/25/2006

Keijo J. Kinnari

2009_1799

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10/14/2010

WENDEROTH, LIND & PONACK, L.L.P.

1030 15th Street, N.W.,

Suite 400 East

Washington, DC 20005-1503

EXAMINER

PAIK, SANG YEOP

ART UNIT

PAPER NUMBER

3742

NOTIFICATION DATE

DELIVERY MODE

10/14/2010

ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

ddalecki@wenderoth.com

coa@wenderoth.com

Office Action Summary	Application No. 10/561,151	Applicant(s) KINNARI ET AL.	
	Examiner SANG Y. PAIK	Art Unit 3742	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 30 July 2010.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 2,5,8-12 and 14 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 2,5,8-12 and 14 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 2, 5, 8-11 and 14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Holen (US 2002/0028070) in view of view Firmin (US 2004/0253734) or Agee et al (US 2003/0178195).

Holen shows the method and the system claimed including a direct electric heating of a subsea pipeline with an electrical current source, a support device supporting the current source, a first and second electrical connections in contact with the pipeline, and a riser cable having a first and a second electrical conductor for conducting electrical current to the first and second electrical connections, in which the current source provides the current sufficient to cause heating of the pipeline to a desired temperature. But, Holen does not explicitly show its heating temperature that is above the melting point of ice but below the melting point of hydrate, and subsequently applying a second plug-counteracting procedure to remove hydrate plug or ice.

Firmin shows that it is known in the art to use means of chemical injection as well as the pressurization system to remove a hydrate plug, and Agee also shows a known means of depressurization to remove a hydrate plug or ice.

In view of Firmin or Agee, it would have been obvious to one of ordinary skill in the art to adapt Holen with a procedure the combination of, or in sequence of, heating and application of the chemical injection or depressurization to enhance the removing of a hydrate plug or ice in the pipeline to facilitate a more effective flow in the pipeline.

With respect to the recited temperature, Holen shows varying degrees of current and voltage levels, and it would have been obvious to set the temperature at the recited range or any other suitable range that depends on the intended applications, including the temperature above the melting point above the ice for its only removal but below the melting point of hydrate as a matter of routine experimentations.

3. Claim 12 is rejected under 35 U.S.C. 103(a) as being unpatentable over Holen in view of Firmin or Agee as applied to claims 2, 5, 8-11 and 14 above, and further in view of Ness et al (US 6,328,583).

Holen in view of Firmin or Agee shows the system claimed except for the support device being a vessel.

Ness shows a support device being a vessel from which an electrical cable is provided therefrom.

In view of Ness, it would have been obvious to one of ordinary skill in the art to adapt Holen, as modified by Holen in view of Firmin or Agee with its support device as that of a vessel, as an alternative means, to provide for a mobile support device that can transport its riser cable to different pipeline locations.

Response to Arguments

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4. Applicant's arguments filed 7/30/10 have been fully considered but they are not persuasive.

The applicant argues that the heating disclosed in Holen would result in heating of the pipeline to a temperature sufficient to melt both ice plugs and hydrate plugs and that there is no disclosure or suggestion in Holen to teach for limiting such temperature above the melting point of ice but below the melting point of a hydrate. This argument is not deemed persuasive since Holen teaches that heating is provided so that the oil transportation will have a low viscosity. Since Holen intends to heat the pipeline to allow a low viscosity in the pipeline, it would have been obvious to one of ordinary skill in the art provide enough heat to allow such low viscosity. It is known in the art that hydrate remains solid at a temperature above the freezing point of water (also see page 1, para [0004] in the applied Agee reference), and if and when an ice is formed in the pipeline, a sufficient heating up to a temperature needed to melt the ice would be all that is needed to free the hydrates and allow the hydrates to flow there through. Thus, as Holen teaches for maintaining a low viscosity to prevent formation of the hydrate plugs, it would have been obvious to one of ordinary skill in the art to provide the heating range, including that of the recited heating temperature in the claims, as a matter of a routine experimentation to maintain a low viscosity within the pipeline for a more efficient flow therein. It is also noted that Holen does not disclose melting of the hydrates in order to maintain the desired viscosity as argued by the applicant.

The applicant also argues that there is no motivation to combine Holen with that of Firmin or Agee since the Holen system can successfully prevent the hydrate plug

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formations. This argument is not deemed persuasive. The combination of the known methods and applications in the same field of endeavor would allow one of ordinary skill in the art to more effectively achieve a desired application as Agee also shows that the combination of any of more known methods can be used to achieve a desired applications including the liberating gas from the hydrate formations (also see page 3, para [0029]). While Holen shows one method to remove the hydrate plugs, the subsequent application of the chemical injection or depressurization as a second plug-counteracting procedure shown by Firmin or Agee would have yielded the predictable result of effectively removing or preventing hydrate plug formations in the pipeline.

Thus, the applicant's arguments are not deemed persuasive.

5. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the mailing date of this final action.

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6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to SANG Y. PAIK whose telephone number is (571) 272-4783. The examiner can normally be reached on M-F (9:00-5:00).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Tu Hoang can be reached on (571) 272-4780. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/SANG Y PAIK/

Primary Examiner, Art Unit 3742